Federal Communications Commission
Washington, D.C.

OFFICE OF
THE SECRETARY

March 19, 2015

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Re: Motion to Accept Filing as Timely Filed
Docket Nos. 14-252 and 12-268

Dear Mr. Brown,

The Office of the Secretary has received your request for acceptance of the documents you filed in the above-referenced proceedings as timely filed, due to technical difficulties with the Commission's Electronic Comment Filing System.

In accordance with 47 C.F.R. Section 0.231(i), I have reviewed your request and your assertions. After considering the relevant arguments, it has been determined that these filings will be accepted as timely filed on Friday, March 13, 2015. If we can be of further assistance, please contact the Office of the Secretary.

Sincerely,

Marlene H. Dortch
Secretary

MHD/gt

**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**

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| In the Matter of | ) | |
| | ) | |
| Competitive Bidding Procedures for | ) | AU Docket No. 14-252 |
| Broadcast Incentive Auction 1000, | ) | |
| Including Auction 1001 and 1002 | ) | |
| | ) | |
| Expanding the Economic and Innovation | ) | GN Docket No. 12-268 |
| Opportunities of Spectrum Through | ) | |
| Incentive Auctions | ) | |

# REPLY COMMENTS OF UNITED STATES CELLULAR CORPORATION


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March 13, 2015

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## REPLY COMMENTS OF UNITED STATES CELLULAR CORPORATION

United States Cellular Corporation ("USCC") submits these reply comments in response to the Public Notice released December 17, 2014 in the above-captioned proceeding and the comments filed in response to the Public Notice.[1] In its comments, USCC expressed its appreciation that the Commission's proposed procedures for the incentive auction are generally consistent with previous actions taken by the Commission to ensure that a variety of carriers have a reasonable opportunity to acquire 600 MHz licenses, and to use this uniquely valuable spectrum to provide much-needed competition in the wireless industry and to deploy broadband networks in currently unserved or underserved areas. USCC, however, also detailed why certain revisions to the Commission's proposals would better ensure that the incentive auction provides a level playing field for carriers of all sizes. In these reply comments, USCC provides additional details regarding the proposals included in its comments and expresses its support for other pro-competitive proposals made by commenters. USCC also opposes certain other proposals that would undermine the pro-competition, pro-consumer actions the Commission has already taken with respect to the incentive auction.

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[1] *See Comment Sought on Competitive Bidding Procedures for Broadcast Incentive Auction 1000, Including Auctions 1001 and 1002*, Public Notice, 29 FCC Rcd 15750 (2014) ("*Public Notice*"). Unless otherwise noted, comments cited herein were filed on February 20, 2015 in AU Docket No. 14-252 in response to the *Public Notice*.

## I. EXECUTIVE SUMMARY

USCC's overarching goal in this proceeding is to help ensure that the procedures for the incentive auction do not place smaller bidders at a competitive disadvantage, or otherwise bias the auction in favor of the largest, already dominant carriers. These reply comments therefore focus are certain auction procedures that will be critical for ensuring that small and regional carriers have a reasonable opportunity to acquire the low-band spectrum they need to remain viable competitors and to help guarantee that all Americans, no matter where they live, have access to the myriad benefits associated with broadband access.

First, USCC strongly urges the Commission not to incorporate bidding procedures into the assignment phase because this would create a significant risk that smaller bidders will be saddled with the most impaired, and thus least valuable, licenses in each PEA. The Commission's proposed discounts for impairments simply would not provide sufficient relief to these bidders. USCC also provides a detailed example which clearly demonstrates that the primary effect of incorporating bidding procedures into the assignment phase would decreased bidding in the clock phase, and thus decreased revenue that could be used to repurpose 600 MHz spectrum.

USCC, therefore, again urges the Commission to instead adopt a quasi-random assignment process that would honor bidders' preference for contiguous blocks to the extent possible, and then randomly determine the remaining frequency assignments. Alternatively, if the Commission insists on incorporating bidding into the assignment phase, USCC urges the Commission to revise its current proposals in order to minimize the disadvantages such bidding likely would create for smaller bidders. Specifically, the Commission should: (1) add a fourth efficiency objective which ensures a more equitable distribution of impairments among all bidders; (2) process assignment round bids on a per-license basis by apportioning each bid

among the number of licenses to which it relates; and (3) sequence the assignment rounds on a random basis.

Second, USCC supports the Commission's proposal to set the price benchmark for the first component of the final stage rule equal to $1.25 per MHz-pop, and to determine whether forward auction bidding has satisfied this average price per MHz-pop based only on the current clock prices for the Category 1 licenses in the largest PEAs. USCC also supports a 20 MHz cap on the amount of reserved spectrum a single bidder may acquire in a PEA. In addition, USCC urges the Commission not to base the amount of reserved spectrum made available in a PEA on the demand expressed by reserve-eligible bidders in a single clock round.

Finally, USCC supports the Commission's proposed generic licenses categories. It therefore opposes proposals that would restrict the number of licenses made available in the incentive auction, or that would permit a broader range of impairments within the same generic category. However, because the licenses in each generic category will have varying levels of impairments, USCC urges the Commission to provide bidders with detailed impairment information prior to the start of bidding in each stage of the forward auction.

## II. AS PROPOSED, THE ASSIGNMENT PHASE WOULD DISADVANTAGE SMALLER BIDDERS AND RISK RELEGATING THEM TO THE MOST IMPAIRED LICENSES IN EACH PEA

In its initial comments, USCC explained how the Commission's proposal to incorporate bidding procedures into the assignment phase would risk relegating smaller bidders, who would be bound to the number of licenses they won in the clock phase, to the most impaired spectrum blocks within the applicable generic category because they could not outbid a nationwide carrier focused on acquiring particular blocks. Other commenters similarly recognized this competitive disadvantage that would result from the currently-proposed assignment phase procedures. For instance, CCA noted that, "where competitive carriers are competing with large nationwide carriers, it is likely that they would be outbid in the assignment phase for the least impaired

blocks."[2] Thus, as C Spire stressed, the Commission "must consider additional assignment round-related safeguards to help ensure that regional, competitive carriers have an opportunity to compete for the least impaired spectrum on a level playing field with dominant providers."[3]

As detailed below, the Commission's proposal to discount licenses "based on their specific degree of predicted impairment"[4] would not sufficiently remedy the systematic assignment of the most impaired licenses to smaller bidders that likely would result if the Commission relies on bidding to determine frequency assignments. Accordingly, USCC again urges the Commission to instead utilize a "quasi-random" assignment process, which would randomly assign specific blocks to bidders, *but only after* the Commission's proposed "efficiency objectives," which are "aimed at assigning contiguous blocks fairly and to the extent possible,"[5] have been optimized.[6] Alternatively, if the Commission insists on incorporating bidding procedures into the assignment phase, it should revise its current proposals in order to minimize the disadvantages such bidding likely would create for smaller bidders. Specifically, the Commission should: (1) add a fourth efficiency objective which minimizes the difference in the average level of impairment of the same-category license(s) assigned to any two bidders; (2) process assignment round bids on a per-license basis by apportioning each bid among the number of licenses to which it relates; and (3) sequence the assignment rounds on a random basis.

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[2] Comments of Competitive Carriers Association ("CCA") at 26; *see* Comments of Comments of Cellular South, Inc. ("C Spire") at 6 (noting its concern "that current proposals for the assignment round will expose smaller, regional carriers to strategies that will undermine wireless competition.") (internal citation omitted).

[3] Comments of C Spire at 6.

[4] *Public Notice*, 29 FCC Rcd at 15798.

[5] *Public Notice*, 29 FCC Rcd at 15815.

[6] *See* Comments of CCA at 38, n. 81 (noting that quasi-random assignment procedures "would not remove the Commission's mechanisms to maximize contiguous spectrum and minimize the 'stranded' blocks held by a single licensee").

### A. The Proposed Discounts Would Not Make Smaller Bidders "Whole"

USCC generally supports the Commission's proposed "price adjustment procedure to account for varying degrees of impairment in the licenses offered."[7] Absent a discount for impaired licenses, bidders of all sizes could be expected to base their clock phase bidding on the value they assign to the most impaired license in a generic category. Moreover, the Commission's specific proposal to uniformly discount each license's "final clock price by one percent for each one percent of predicted impairment"[8] provides a simple mechanism for both the Commission and bidders to determine the discount that will apply to a particular license.

The Commission's proposal, however, would fail to provide adequate relief to smaller bidders that find themselves saddled with the most impaired licenses in each PEA if the Commission unnecessarily incorporates bidding procedures into the assignment phase. For a variety of reasons, the proposed discounts would not make licenses with impairments ranging from 0% to 15%, or from 16% to 50%, reasonably fungible.[9] As Sprint recognized, while the Commission's proposal "assumes a linear relationship between impairment and value," in reality, the "impact on value is likely to vary tremendously between operators..."[10] For instance, USCC previously explained that, because the borders of PEAs do not necessarily align with the CMA-based boundaries of many smaller carriers' existing service areas, even a relatively small amount of interference could significantly affect the value of a license for a particular bidder if the impairments are concentrated in the portions of the PEA that encompass its current service

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[7] *Public Notice*, 29 FCC Rcd at 15797.

[8] *Id.* at 15798.

[9] *See id.* (noting its belief that, as a result of the proposed discounts, "licenses with potential impairments that affect between zero and 15 percent of the population reasonably may be considered fungible"). However, for the reasons detailed below, USCC does not support the Commission's alternative proposal to restrict Category 1 to only those licenses that are not subject to any inter-serve interference. *See id.*

[10] Comments of Sprint Corporation at 24-25; *see* Comments of CTIA – The Wireless Association at 13 ("[T]he value of an impaired license does not decline linearly as the degree of impairment rises.").

area.[11] As CCA cautioned, "a discount that corresponds to the impairment percentage for the license may be of little consolation to a regional carrier that cannot use the spectrum it wins to support its business plan."[12]

Also as a result of the variety of license areas held by carriers, the amount of spectrum a bidder already possesses may vary across a PEA, which would cause the bidder to value impaired licenses differently depending on the location of the impairments. For instance, if the impairments cover areas where the bidder does not already possess a sufficient amount of spectrum, and thus where it most requires additional spectrum, this would cause the bidder to assign a much lower value to the license. On the other hand, if the impairments are restricted to areas where the bidder already possesses a reasonable amount of spectrum, the bidder may apply a much smaller discount to the license.

Similarly, but on a broadly-applicable basis, CTIA noted that there are "several scenarios where a numerically small impairment could have a major impact on a license's value."[13] For instance, a minimal amount of interference, as measured in terms of percentage of population, could significantly diminish the value of a license if the impaired portions of the PEA encompass important, but essentially unpopulated, areas (*e.g.*, highways, stadiums).[14] In addition, AT&T noted how the proposed linear discounts "do not capture the true variation in impairment among spectrum blocks because they fail to account for the *type* of impairment."[15] For instance, the value of a license could vary significantly depending on whether the carrier "must merely accept

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[11] *See* Comments of AT&T at 19 ("[T]he *location* of the impairment has a significant impact on the value of the license.") (emphasis in original); Comments of Sprint at 25 ("This categorical determination … ignores important deployment considerations related to the area of the PEA that is impaired.").

[12] Comments of CCA at 37.

[13] Comments of CTIA at 13.

[14] *See id.* at 13; *see* also Comments of AT&T at 20 ("[P]opulation levels tend to be low along major highways and railways and at major airports, and therefore the Commission's approach would give little weight to these areas when computing impairment levels."); Comments of Sprint at 25 (noting that "certain less-populated areas may hold significant utility value for operators").

[15] Comments of AT&T at 19 (emphasis in original).

interference from the TV station," or whether the impaired area constitutes an "exclusion zone," in which wireless operations would be prohibited.[16] Sprint likewise explained how the intensity of an impairment – *i.e.*, the amount it exceeds the interference threshold – greatly affects the value of a license because "impairment levels close to the interference threshold could invite post-auction remedies…"[17]

### B. Quasi-Random Assignments Would Help to Level the Playing Field

Given that incorporating bidding procedures into the assignment phase likely would place smaller bidders at a significant competitive disadvantage, and because the proposed linear impairment discounts would fail to sufficiently remedy the resulting harm to these bidders, USCC again urges the Commission to instead utilize a quasi-random assignment process. As USCC detailed in its comments, nearly every commenter that addressed this issue in the underlying rulemaking proceeding urged the Commission to rely on random or quasi-random, rather than bidding, procedures in the assignment phase.[18] The record in this proceeding likewise supports quasi-random assignment procedures as a result of the likely harm bidding procedures would inflict upon smaller bidders.

For instance, C Spire stressed that quasi-random assignment procedures would "substantially reduce[] the potential of anti-competitive strategies in which larger carriers could foreclose smaller operators' access to the most desirable spectrum."[19] Similarly, CCA explained how "[r]andom assignment following the application of optimization criteria would … limit the potential for anti-competitive foreclosure during the assignment phase by limiting the ability of dominant carriers to secure the most desirable spectrum blocks."[20] Another benefit of a quasi-

[16] *Id.*

[17] Comments of Sprint at 27.

[18] *See* Comments of USCC at 8-11.

[19] Comments of C Spire at 6.

[20] Comments of CCA at 38.

random assignment process noted by commenters is that it "would significantly simplify the assignment process,"[21] and thereby help to achieve one of the Commission's overarching goals for the incentive auction.[22] In addition, like in the underlying rulemaking proceeding,[23] commenters here explained how assignment phase bidding "could limit forward-auction revenues because participants would necessarily hold back capital to secure preferred spectrum blocks in the assignment round."[24]

Notably, while bidding procedures could give rise to these various public interest harms, the following example aptly demonstrates that these procedures would result in few, if any, benefits to the Commission, bidders, or the public.[25] This example also demonstrates that the Vickrey-Clarke-Groves "second price" mechanism, upon which the Commission proposes to base pricing in the assignment phase, is ill-suited for this purpose, and will ultimately lead to lower revenues in the clock phase of the forward auction. For this example, assume that an assignment round relates to a PEA for which there are six Category 1 licenses (blocks A through F) and no Category 2 licenses, and that three different bidders acquired these six generic licenses during the clock phase. Specifically, Bidder 1 holds three of the licenses, Bidder 2 holds two, and Bidder 3 holds one. As illustrated in the chart below, six different assignment plans would satisfy all three of the Commission's proposed efficiency objectives.

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[21] *Id.* at 37; *see* Comments of C Spire at 6 ("Random assignment of licenses among the provisionally winning bidders within a given market would substantially simplify the license assignment process.").

[22] *See, e.g., Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, 12554 (2012) (Statement of Commissioner Rosenworcel) ("[A]t every structural juncture, I believe that a bias toward simplicity is crucial."); *id.* at 12560 (Statement of Commissioner Pai Approving in Part and Concurring in Part) ("The incentive auction process is inherently complicated; we don't need to introduce unnecessary complexities.").

[23] *See* Comments of USCC at 10-11.

[24] Comments of CCA at 38; *see* Comments of C Spire at 6 (explaining that bidding procedures "could encourage bidders to reduce their forward-auction bids in order to preserve capital resources for the pursuit of 'better' spectrum blocks in the assignment round.").

[25] *See* Comments of C Spire at 6 ("[I]t seems that little is to be gained from the Commission's proposed formal assignment procedures…").

| Spectrum Block | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Percentage Impairment | 2% | 0% | 6% | 8% | 4% | 0% |
| Plan 1 | Bidder 1 | | | Bidder 2 | | Bidder 3 |
| Plan 2 | Bidder 1 | | | Bidder 3 | Bidder 2 | |
| Plan 3 | Bidder 3 | Bidder 1 | | | Bidder 2 | |
| Plan 4 | Bidder 2 | | Bidder 1 | | | Bidder 3 |
| Plan 5 | Bidder 2 | | Bidder 3 | Bidder 1 | | |
| Plan 6 | Bidder 3 | Bidder 2 | | Bidder 1 | | |

Under the Vickrey-Clarke-Groves pricing mechanism, for every bidder, the optimal strategy is to submit bids that are equal to the full value the bidder assigns to the goods being auctioned. As the Commission notes, this is because the bidders know that, if their bids are successful, "they will pay no more than would have been necessary to ensure" such success.[26] With respect to assigning values to the different spectrum blocks that could be assigned to bidders once the Commission's efficiency objectives have been optimized, each bidder would be expected to assign $0 to the worst feasible block assignment(s). We can further assume that the primary determinant of which assignment each bidder deems the "worst" will be the associated level of impairment. Thus, each of the three bidders in our example would assign a value of $0 to the plan that would assign licenses to it with the highest total impairments. The bidders would then value their other feasible assignments in terms of the additional value each would provide in relation to their "worst" assignment plans.

Here, for simplicity's sake, we will assume that the bidders generally assign a value of $1 for each percent of lower total impairment they would receive under an assignment plan as compared to the "worst" plan for each bidder. Specifically, we will assume that Bidders 2 and 3 both assign exactly this 1%-to-$1 relationship. However, to ensure that only one of the six feasible assignment plans is optimal based on their bidding, we will assume that Bidder 1 assigns

[26] *Public Notice*, 29 FCC Rcd at 15815.

a slightly lower value of $0.9999 to each percent of reduced impairment.[27] As illustrated in the chart below, for all six assignment plans, each bidder would determine its "impairment cost" by multiplying the total impairment of the license(s) it would be assigned under the plan by $1, or in the case of Bidder 1, by $0.9999. The "worst" assignment plan for each bidder is marked by asterisks.

| Spectrum Block | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Percentage Impairment | 2% | 0% | 6% | 8% | 4% | 0% |
| **Assignment Plan 1** | Bidder 1 | | | Bidder 2 | | Bidder 3 |
| Sum of Impairments | 8% | | | 12% | | 0% |
| Impairment Cost | (8) (0.9999) = **$7.999** | | | (12) (1) = *** $12 *** | | (0) (1) = **$0** |
| **Assignment Plan 2** | Bidder 1 | | | Bidder 3 | Bidder 2 | |
| Sum of Impairments | 8% | | | 8% | 4% | |
| Impairment Cost | (8) (0.9999) = **$7.999** | | | (8) (1) = *** $8 *** | (4) (1) = **$4** | |
| **Assignment Plan 3** | Bidder 3 | Bidder 1 | | | Bidder 2 | |
| Sum of Impairments | 2% | 14% | | | 4% | |
| Impairment Cost | (2) (1) = **$2** | (14) (0.9999) = **$13.999** | | | (4) (1) = **$4** | |
| **Assignment Plan 4** | Bidder 2 | | Bidder 1 | | | Bidder 3 |
| Sum of Impairments | 2% | | 18% | | | 0% |
| Impairment Cost | (2) (1) = **$2** | | (18) (0.9999) = *** $17.998 *** | | | (0) (1) = **$0** |
| **Assignment Plan 5** | Bidder 2 | | Bidder 3 | Bidder 1 | | |
| Sum of Impairments | 2% | | 6% | 12% | | |
| Impairment Cost | (2) (1) = **$2** | | (6) (1) = **$6** | (12) (0.9999) = **$11.999** | | |
| **Assignment Plan 6** | Bidder 3 | Bidder 2 | | Bidder 1 | | |
| Sum of Impairments | 2% | 6% | | 12% | | |
| Impairment | (2) (1) = | (6) (1) = | | (12) (0.9999) = | | |

[27] Specifically, if we were to assign a value of exactly $1 to all three bidders, each of the six feasible assignment plans would generate total bids of $18, which would cause the auction system to randomly select the winning assignment plan. Thus, assigning a slightly different value to one bidder is necessary in order to be able to analyze a particular winning assignment plan.

| | | | |
|---|---|---|---|
| Cost | **$2** | **$6** | **$11.999** |

Thus, the "worst" assignment plan for each bidder is as follows: (a) Plan 4 for Bidder 1; (b) Plan 1 for Bidder 2; and (c) Plan 2 for Bidder 3. As noted, each bidder would assign a value of $0 to its "worst" assignment plan. As illustrated in the chart below, the bidders would then assign values to the other assignment plans based on the reduced level of total impairment they would receive under these other plans as compared to their "worst" assignment plans. Specifically, for each assignment plan, a bidder would subtract the "Impairment Cost" for that plan from the impairment cost associated with its "worst" assignment plan. The result will be the amount it bids for the frequency assignments it would receive with that plan. Also as illustrated in the chart below, the bids submitted with respect to the assignments associated with each plan would be added together, and the assignment plan with the highest total bids (here, Plan 4) would be selected as the winning assignment plan.

| Spectrum Block | A | B | C | D | E | F | |
|---|---|---|---|---|---|---|---|
| Percentage Impairment | 2% | 0% | 6% | 8% | 4% | 0% | |
| **Assignment Plan 1** | Bidder 1 | | | Bidder 2 | | Bidder 3 | Total Bids |
| Sum of Impairments | 8% | | | 12% | | 0% | |
| Impairment Cost for This Plan | $7.999 | | | $12 | | $0 | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $17.998 – $7.999 = **$9.999** | | | $12 – $12 = **$0** | | $8 – $0 = **$8** | $17.999 |
| **Assignment Plan 2** | Bidder 1 | | | Bidder 3 | Bidder 2 | | Total Bids |
| Sum of Impairments | 8% | | | 8% | 4% | | |
| Impairment Cost for This Plan | $7.999 | | | $8 | $4 | | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $17.998 – $7.999 = **$9.999** | | | $8 – $8 = **$0** | $12 – $4 = **$8** | | $17.999 |
| **Assignment Plan 3** | Bidder 3 | Bidder 1 | | | Bidder 2 | | Total Bids |
| Sum of Impairments | 2% | 14% | | | 4% | | |
| Impairment Cost for This Plan | $2 | $13.999 | | | $4 | | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $8 – $2 = **$6** | $17.998 – $13.999 = **$3.999** | | | $12 – $4 = **$8** | | $17.999 |
| **Assignment Plan 4** | Bidder 2 | | Bidder 1 | | | Bidder 3 | Total Bids |
| Sum of Impairments | 2% | | 18% | | | 0% | |
| Impairment Cost for This Plan | $2 | | $17.998 | | | $0 | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $12 – $2 = **$10** | | $17.998 – $17.998 = **$0** | | | $8 – $0 = **$8** | * **$18** * |
| **Assignment Plan 5** | Bidder 2 | | Bidder 3 | Bidder 1 | | | Total Bids |
| Sum of Impairments | 2% | | 6% | 12% | | | |
| Impairment Cost for This Plan | $2 | | $6 | $11.999 | | | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $12 – $2 = **$10** | | $8 – $6 = **$2** | $17.998 – $11.999 = **$5.999** | | | $17.999 |
| **Assignment Plan 6** | Bidder 3 | Bidder 2 | | Bidder 1 | | | Total Bids |
| Sum of Impairments | 2% | 6% | | 12% | | | |
| Impairment Cost for This Plan | $2 | $6 | | $11.999 | | | |
| Bid Amount = (Impairment Cost of Worst Assignment) – (Impairment Cost for this Plan) | $8 – $2 = **$6** | $12 – $6 = **$6** | | $17.998 – $11.999 = **$5.999** | | | $17.999 |

The next step is to determine the amount actually owed by each bidder as a result of Assignment Plan 4 being selected as the winning plan. For Bidder 1, this is a very simple

process for Bidder 1 because it had submitted a bid of $0 for the frequency assignments associated with Plan 4.[28] For Bidders 2 and 3, a "second price" mechanism will determine the amount they must actually pay for their winning assignments, which the Commission notes will be equal to the "price that would have been 'just sufficient' to result in the same winning assignment set."[29] Specifically, for each bidder, the auction system will determine which band plan would have won if this particular bidder had not participated in the assignment round. As illustrated in the chart below, it does this by setting the bidder's bids equal to $0 with respect to its potential block assignments under each plan. The auction system then sums the remaining bids together to determine the winning assignment plan in this hypothetical assignment round.

In order to determine the amount owed by this bidder, the auction system first calculates a "Bid Discount" by subtracting the total bid amount for the "Hypothetical Winning Plan" from the total bid amount for the actual winning assignment plan. The amount owed by the bidder is then calculated by subtracting this "Bid Discount" from the amount the bidder actually bid for the blocks associated with the winning assignment plan. As noted, here, Plan 4 was the winner, and the total bid amount submitted for the frequencies associated with Plan 4 was $18. The chart below illustrates this process as applied to Bidder 2 in our example.

[28] *See id.*, Appendix H, 29 FCC Rcd at 15905 ("If a bidder placed a bid of zero in the assignment round (or did not bid), then no additional calculation is necessary, and the bidder will not have any additional assignment phase payment for that assignment round.").

[29] *Id.*

| | "Second Price" Determination for Bidder 2 | | | | | | |
|---|---|---|---|---|---|---|---|
| Spectrum Block | A | B | C | D | E | F | |
| Assignment Plan 1 | Bidder 1 | | | Bidder 2 | | Bidder 3 | Hypothetical Total Bids |
| Bid Amounts | $9.999 | | | $0 | | $8 | * **$17.999** * |
| Assignment Plan 2 | Bidder 1 | | | Bidder 3 | Bidder 2 | | Hypothetical Total Bids |
| Bid Amounts | $9.999 | | | $0 | $0 | | $9.999 |
| Assignment Plan 3 | Bidder 3 | Bidder 1 | | | Bidder 2 | | Hypothetical Total Bids |
| Bid Amounts | $6 | $3.999 | | | $0 | | $9.999 |
| Assignment Plan 4 | Bidder 2 | | Bidder 1 | | | Bidder 3 | Hypothetical Total Bids |
| Bid Amounts | $0 | | $0 | | | $8 | $8 |
| Assignment Plan 5 | Bidder 2 | | Bidder 3 | Bidder 1 | | | Hypothetical Total Bids |
| Bid Amounts | $10 | | $0 | $5.999 | | | $15.999 |
| Assignment Plan 6 | Bidder 3 | Bidder 2 | | Bidder 1 | | | Hypothetical Total |
| Bid Amounts | $2 | $0 | | $5.999 | | | $7.999 |
| Hypothetical Winning Assignment Plan | Plan 1 (Total Bids = $17.999) | | | | | | |
| Bid Discount | (Total Bids for Actual Winning Plan) – (Total Bids for Hypothetical Winning Plan) = $18 – $17.999 = $0.001 | | | | | | |
| Actual Amount Owed for Assignment Round | (Bid for Winning Assignment Plan) – (Discount) = $10 – $0.001 = **$9.999** | | | | | | |

As illustrated in the chart below, the same process would be run with respect to Bidder 3 in order to determine the amount it must pay for this assignment round.

| | "Second Price" Determination for Bidder 3 | | | | | | |
|---|---|---|---|---|---|---|---|
| Spectrum Block | A | B | C | D | E | F | |
| Assignment Plan 1 | Bidder 1 | | | Bidder 2 | | Bidder 3 | Hypothetical Total Bids |
| Bid Amounts | $9.999 | | | $0 | | $0 | $9.999 |
| Assignment Plan 2 | Bidder 1 | | | Bidder 3 | Bidder 2 | | Hypothetical Total Bids |
| Bid Amounts | $9.999 | | | $0 | $8 | | *** $17.999 *** |
| Assignment Plan 3 | Bidder 3 | Bidder 1 | | | Bidder 2 | | Hypothetical Total Bids |
| Bid Amounts | $0 | $3.999 | | | $8 | | $12.999 |
| Assignment Plan 4 | Bidder 2 | | Bidder 1 | | | Bidder 3 | Hypothetical Total Bids |
| Bid Amounts | $10 | | $0 | | | $0 | $10 |
| Assignment Plan 5 | Bidder 2 | | Bidder 3 | Bidder 1 | | | Hypothetical Total Bids |
| Bid Amounts | $10 | | $0 | $5.999 | | | $15.999 |
| Assignment Plan 6 | Bidder 3 | Bidder 2 | | Bidder 1 | | | Hypothetical Total |
| Bid Amounts | $0 | $6 | | $5.999 | | | $11.999 |
| Hypothetical Winning Assignment Plan | Plan 2 (Total Bids = $17.999) | | | | | | |
| Bid Discount | (Total Bids for Actual Winning Plan) – (Total Bids for Hypothetical Winning Plan) = $18 – $17.999 = $0.001 | | | | | | |
| Actual Amount Owed for Assignment Round | (Bid for Winning Assignment Plan) – (Discount) = $8 – $0.001 = **$7.999** | | | | | | |

The chart below provides a summary of the process detailed above. In addition to the assignment round payment owed by each bidder, it lists the "Impairment Cost" to each bidder associated with the spectrum they received as a result of Plan 4 being the winning assignment plan for this PEA. As detailed above, the "Impairment Cost" to a bidder is the product of the total impairment of the licenses assigned to it and value the bidder assigns to each percentage point of reduced impairment (here, we assumed $1/1% for Bidders 2 and 3, and $0.9999/1% for Bidder 1). Each bidder's "Total Cost," which also are listed in the chart below, is the sum of the amount it must pay for the assignment round and its "Impairment Cost."

| Summary | | | |
|---|---|---|---|
| **Bidder** | **1** | **2** | **3** |
| Assignment Round Payment | $0 | $9.999 | $7.999 |
| Impairment Cost of Blocks Won | $17.998 | $2 | $0 |
| Total Cost (Payment + Impairment Cost) | $17.998 | $11.999 | $7.999 |
| | | | |
| Impairment Cost of Worst Possible Block Assignment(s) | $17.998 | $11.999 | $7.999 |

Note that the "Total Cost" for all three bidders is effectively equal to the "Impairment Cost" associated with the worst possible license assignments for these bidders. This demonstrates that this assignment round extracted maximum revenue from these bidders (*i.e.*, reached "equilibrium"), which is what auctions are designed to do. However, it also demonstrates that each bidder is in no better of a position than if it had received its "worst" frequency assignments. Although some of the bidders received more favorable assignments, they are required to pay roughly their full bids for these assignments. While Bidder 1 is not required to pay anything for this assignment round, it was assigned its "worst" frequency assignments. In other words, every bidder ended up with essentially no retained value.

While this is an optimal outcome in a typical auction, with respect to the atypical assignment phase "auction," it could cause serious harm for the overall goals of the incentive auction. Specifically, because bidders will anticipate that the value of winning generic licenses in the clock phase auction is actually the value of winning their "worst" frequency assignments (after taking into account both the frequency assignments and the payments to the Commission in the assignment phase), they will rationally reduce their bids during the clock phase, which could lead to reduced clearing targets or even auction failure. Accordingly, the Commission's role in the assignment phase should be that of a facilitator, not the seller in an auction collecting the buyers' bids. Thus, rather than incorporate any bidding procedures into the assignment phase, the Commission should simply include impairment-based constraints in its optimization mechanism, like the one USCC proposed in its comments and details further below, and in the

case of ties after those constraints have been optimized, randomly select the winning assignment plan. In addition to making the assignment phase far less complex, and thus burdensome for bidders, this approach would lead to greater revenues during the crucially important clock phase.

### C. If the Commission Adopts Bidding Procedures, an Additional Efficiency Objective is Needed to Ensure an Equitable Distribution of Licenses

If the Commission bases winning frequency assignments in part on bidding, USCC again urges the Commission to add an "impairment averaging" objective to its proposed optimization mechanism in order to prevent the largest bidders from using their vastly superior financial resources to monopolize all of the least impaired licenses. Specifically, in its comments, USCC proposed that the following be added as a fourth objective: (4) minimizing the difference in the level of impairment, as averaged across the number of generic licenses held by each bidder, between the Category 1 license(s) assigned to any two bidders, as well as between the Category 2 license(s) assigned to any two bidders. USCC now clarifies that this objective would be optimized in two stages, first with respect to Category 1 licenses, and then with respect to Category 2 licenses. In other words, minimizing the difference in the average level of impairment of the Category 1 licenses would take precedence over minimizing this difference with respect to any Category 2 licenses in the same PEA.

More specifically, for each assignment plan that satisfies all three of the Commission's proposed objectives, the auction system would first calculate the average level of impairment for each bidder's Category 1 license(s), and then determine the difference between the bidder with the highest average impairment and the bidder with the lowest average impairment. If only one assignment plan produces the smallest difference between these two averages, it would become the plan for that PEA. In the case of a tie, if the PEA has no Category 2 licenses, or if only one

possible assignment of bidders to the Category 2 licenses satisfies the first three objectives, the auction system would randomly determine the winning assignment plan.[30]

On the other hand, if more than one possible assignment of bidders to the Category 2 licenses remains after all of the preceding objectives, including the Category 1 "impairment averaging" objective, have been optimized, the auction system would calculate the average level of impairment for each bidder's Category 2 license(s). The system would then determine the difference between the bidder with the highest average Category 2 impairment and the bidder with the lowest average Category 2 impairment. Like with respect to Category 1 licenses, if only one assignment plan produces the smallest difference between these two averages, it would become the plan for that PEA. And, in the case of a tie, the auction system would randomly determine the winning assignment plan.

As a result of this clarification, USCC restates its proposed fourth objective as follows: first, minimizing the difference in the average level of impairment of the Category 1 licenses held by any two bidders; and then, minimizing the difference in the average level of impairment of the Category 2 licenses held by any two bidders.

In its initial comments, USCC provided a detailed example of the operation of its proposed "impairment averaging" objective.[31] That example clearly demonstrated how this additional objective would serve the public interest by ensuring far more equitable frequency assignments. Specifically, this objective would greatly minimize the risk that the licenses assigned to some bidders will have far higher average impairments, while at the same time assigning licenses to the other bidders in the same PEA with average impairments that only slightly exceed the best-case scenario for these bidders.

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[30] For the reasons discussed above, randomly breaking any ties would best serve the public interest. However, the winning assignment plan could instead be determined based on bidding because USCC's proposed "impairment averaging" objective would help to reduce the risk that smaller bidders are systematically assigned the most impaired licenses.

[31] *See* Comments of USCC at 13-15.

As a result of the clarification regarding the treatment of Category 2 licenses detailed above, and because the example USCC provided in its initial comments involved a PEA with only Category 1 licenses, the following provides an example of the operation of the "impairment averaging" objective in a market with both Category 1 and Category 2 licenses. For this example, assume that the PEA has seven total licenses – four Category 1 licenses (blocks A-C and G) and three Category 2 licenses (blocks D-F). Assume further that these seven generic licenses are distributed among four different bidders as follows: (a) Bidder 1 holds two Category 1 licenses; (b) Bidder 2 holds one Category 1 license; (c) Bidder 3 holds one Category 1 license and one Category 2 license; and (d) Bidder 4 holds two Category 2 licenses.

As illustrated in the charts below, three different assignment plans would fully satisfy all three of the Commission's proposed objectives. Also as illustrated below, after optimizing the "impairment averaging" objective with respect to the Category 1 licenses, two feasible assignment plans would remain (Plan 1 and Plan 2). As a result, the auction system would then optimize this objective with respect to the Category 2 licenses, which also would result in two feasible assignment plans (Plan 2 and Plan 3).[32] However, only Plan 2 produces the smallest difference between the highest and lowest average impairments with respect to both the Category 1 and Category 2 licenses. Accordingly, this would become the assignment plan for this PEA.

**Assignment Plan 1**

| | Bidder 1 | | Bidder 3 | | Bidder 4 | | Bidder 2 |
|---|---|---|---|---|---|---|---|
| Spectrum Block | A | B | C | D | E | F | G |
| Percentage Impairment | 8% | 3% | 6% | 28% | 38% | 30% | 5% |
| Average % per Bidder (on Category Basis) | 5.5% | | 6% | 28% | 34% | | 5% |
| Category 1 Difference: Highest vs. Lowest Average % | 6% (Bidder 3) – 5% (Bidder 2) = 1% | | | | | | |
| Category 2 Difference: Highest vs. Lowest Average % | 34% (Bidder 4) – 28% (Bidder 3) = 6% | | | | | | |

[32] If only one feasible assignment plan remained after optimizing this objective with respect to the Category 1 licenses, that assignment plan would be the winning plan for the PEA. In other words, the auction system would not analyze the impairments of the Category 2 licenses pursuant to the second stage of this objective.

**Assignment Plan 2**

| | Bidder 1 | | Bidder 2 | Bidder 4 | | Bidder 3 | |
|---|---|---|---|---|---|---|---|
| Spectrum Block | A | B | C | D | E | F | G |
| Percentage Impairment | 8% | 3% | 6% | 28% | 38% | 30% | 5% |
| Average % per Bidder (on Category Basis) | 5.5% | | 6% | 33% | | 30% | 5% |
| Category 1 Difference: Highest vs. Lowest Average % | 6% (Bidder 2) – 5% (Bidder 3) = 1% | | | | | | |
| Category 2 Difference: Highest vs. Lowest Average % | 33% (Bidder 4) – 30% (Bidder 3) = 3% | | | | | | |

**Assignment Plan 3**

| | Bidder 2 | Bidder 1 | | Bidder 4 | | Bidder 3 | |
|---|---|---|---|---|---|---|---|
| Spectrum Block | A | B | C | D | E | F | G |
| Percentage Impairment | 8% | 3% | 6% | 28% | 38% | 30% | 5% |
| Average % per Bidder (on Category Basis) | 8% | 4.5% | | 33% | | 30% | 5% |
| Category 1 Difference: Highest vs. Lowest Average % | 8% (Bidder 2) – 5% (Bidder 3) = 3% | | | | | | |
| Category 2 Difference: Highest vs. Lowest Average % | 33% (Bidder 4) – 30% (Bidder 3) = 3% | | | | | | |

This example again clearly demonstrates that, in contrast to bidding procedures, USCC's proposed fourth efficiency objective would ensure an equitable distribution of frequency assignments among bidders. For instance, if Plan 3 had been selected, there would have been a 3.5% difference between the Category 1 licensees with the highest and lowest average impairments. In contrast, with Plan 2, there is only a 1% difference between the highest and lowest average impairments for the Category 1 licensees. Notably, this efficiency objective also ensured the most equitable distribution of the Category 2 licenses. For instance, if Plan 1 had been selected, there would have been a 6% difference between the impairment of Bidder 3's Category 2 license and the average impairment of Bidder 4's Category 2 licenses. In contrast, with Plan 2, this difference is reduced to only 3%. At the same time, no bidder is much worse off as a result of optimizing for this objective.

In its comments, CCA also proposed that the Commission include another objective in the optimization mechanism to ensure that bidders holding only a single generic license for a PEA "be assigned the least impaired block within the category on which they bid."[33] Given that "the only three objectives the Commission proposes to consider ... uniformly favor multi-license or multi-market provisionally winning bidders," CCA explained that this objective is needed in order to help "protect the interest of smaller businesses in serving their entire market with the only license they may be able to acquire."[34] Although this "singleton" objective could help to advance the public interest, it should not take precedence over USCC's proposed "impairment averaging" objective. CCA's proposal would only benefit bidders holding a single generic license for a PEA even though many bidders, including small and regional carriers, likely will at least attempt to acquire more than one license in many or all of the PEAs that fit within their business plans. In contrast, USCC's proposal would benefit all bidders, large and small, those holding a single license and those holding multiple licenses, and thus would also address the concern that caused CCA to propose the "singleton" objective. Thus, the Commission should only adopt CCA's proposal as the fifth objective, which would cause the auction system to optimize for the Commission's three contiguity objectives and USCC's "impairment averaging" objective before attempting to assign the least-impaired licenses to singleton bidders.

CCA also urged the Commission, if it incorporates bidding procedures into the assignment phase, to provide "ten assignment auction preferences for use in the PEAs or PEA groupings where they have submitted a provisionally winning bid."[35] As CCA explained, under this proposal, a bidder could use one of these preferences "to choose a preferred block in a given

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[33] Comments of CCA at 36.

[34] *Id.* at 35.

[35] *Id.* at 39.

PEA without having to submit a bid to secure this license."[36] USCC agrees with CCA that this proposal would help to "promote competition and reduce the risk that competitive carriers will uniformly fall into the least desirable 600 MHz blocks."[37] Again, however, USCC does not believe this mechanism should take precedence over its proposed "impairment averaging" objective, which is designed to address the same concerns but would be far less complicated to implement.

USCC also notes that both CCA and T-Mobile proposed that the Commission "prioritize the assignment of the same channel blocks across geographically adjacent markets to a point."[38] As these commenters noted, there are certain benefits to carriers from having geographically-contiguous spectrum blocks. For instance, it "obviates the need for coordination between co-channel licensees and the attendant need to limit signal strength and wireless coverage in border zones,"[39] while also allowing for "less complex and more reliable inter-cell handoff at the license boundaries."[40] At the same time, however, an "excessively uniform spectrum assignment can produce extremely negative consequences for consumers and competition."[41] For instance, CCA explained how this "can create opportunities for discriminatory conduct in hardware design or software functions, or relegate non-national carriers to the least desirable channels."[42] USCC therefore agrees that "prioritizing inter-area contiguity should not result in the assignment of frequencies on a nationwide basis or across larger geographic areas."[43] USCC also urges the

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[36] *Id.*

[37] *Id.* at 38.

[38] Comments of T-Mobile at 47; *see* Comments of CCA at 40 ("Assigning carriers the same channels over adjacent PEAs should also be an efficiency objective…").

[39] Comments of CCA at 40-41.

[40] Comments of T-Mobile at 47.

[41] *Id.* at 48.

[42] Comments of CCA at 3; *see* Comments of T-Mobile at 49 ("Establishing common channels across broad[] geographic areas would risk creating incentives for discriminatory conduct in hardware design or software function.").

[43] Comments of CCA at 41.

Commission, if it adopts this inter-PEA contiguity objective, to give it a lower priority than USCC's proposed "impairment averaging" objective, as well as CCA's proposed "singleton" and "assignment preferences" objectives, because the public interest benefits of ensuring that smaller bidders are not systematically assigned the most impaired licenses far outweigh providing some carriers with a certain level of cross-PEA contiguity.[44]

USCC further urges the Commission to only adopt this proposal if it also adopts a random sequencing mechanism for the assignment rounds. As detailed below in Section II.E., the Commission's current sequencing proposal likely would result in most, if not all, smaller bidders not even participating in the assignment phase until the later rounds, by which time the largest bidders would have firmly established frequency preferences, and thus be willing to submit inflated bids to ensure they are assigned the same spectrum blocks in these smaller PEAs, which will be the focus of small and regional carriers. Similarly, if the Commission adopts its current sequencing proposal, this inter-PEA contiguity objective likely would benefit only the largest bidders because these bidders would already have frequency assignments in numerous PEAs once smaller bidders first participate in the assignment phase. As a result, only the largest bidders would have existing frequency assignments that this objective would attempt to match in later assignment rounds. Smaller bidders, therefore, could be relegated to the least desirable spectrum blocks in the first rounds in which they participate. This harm would then be compounded because an inter-PEA contiguity objective would attempt to assign these smaller bidders to these same blocks in subsequent rounds.

[44] *See* Comments of T-Mobile at vi ("The deployment efficiencies associated with same-channel deployments will not outweigh the demonstrable risk of anti-competitive exclusionary conduct that comes with a carrier acquiring exclusive control of a substantial share of a group of the same spectrum resources nationally or in very large regions of the country.").

### D. Assignment Round Bids, if Any, Should be Apportioned on a Per-License Basis to Prevent a Bias in Favor of Bidders With Multiple Generic Licenses

If the Commission relies on bidding procedures for the assignment phase despite the demonstrated harms, and very minimal benefits, associated with this approach, USCC again urges it to process assignment round bids on a per-license basis. As USCC previously explained, under this proposal, the auction system would divide the single bid submitted by each bidder in an assignment round by the total number of generic licenses held by the bidder for the PEA or group of PEAs involved in that assignment round.[45] Like USCC, CCA explained how the currently proposed approach, which would determine assignment round winners based on the total amount a bidder indicates it is willing to pay for all of its preferred blocks, would create "an unfair advantage for the largest carriers which are likely to win the most licenses at auction."[46]

In its comments, USCC provided an example of how these two approaches, even when the bidders and their bid amounts are identical, can lead to drastically different assignment outcomes.[47] Specifically, under the Commission's proposal, a bidder with multiple generic licenses for a PEA often will be awarded its preferred assignments even though, on a per-license basis, it bid less than some or all of the other bidders. In contrast, if the same bids were instead processed using USCC's proposed approach, those bidders who assigned higher values, on a per-license basis, to their preferred frequency blocks would have their preferences honored. USCC also again notes that the Commission's proposal to "package" assignment round bids together often would not have the effect of allowing a group of bidders holding single generic licenses for a PEA to effectively compete against a large bid for multiple preferred blocks. For instance, some of these bidders may submit bids only with respect to a few potential assignments, which

[45] USCC again notes that, if the Commission adopts only its two lead grouping proposals, it could instead divide each bid by the total number of generic licenses held by the bidder in each PEA because, under those proposals, every bidder would hold the same number and category of generic licenses in every PEA included in the group. *See Public Notice*, 29 FCC Rcd at 15813.

[46] Comments of CCA at 3.

[47] *See* Comments of USCC at 17-18.

could lead to an incomplete set of individual bids competing against a multi-block bid. Alternatively, some bidders may simply decide not to participate in the assignment phase, which may be a real likelihood given that, as demonstrated in the example above, bidders will not expect a net gain from the assignment phase, regardless of their bidding strategies or the strategies of other bidders.

### E. The Commission Should Randomly Sequence the Assignment Rounds

USCC again urges the Commission to sequence the assignment rounds on a random basis, rather than in descending order of weighted-pops. As USCC previously detailed, under the Commission's proposal, frequencies would be assigned in forty or more PEAs before most, if not all, smaller bidders would participate in their first assignment round. By that point, the largest bidders will have firmly established frequency preferences based on the outcomes of dozens of previous rounds, and thus likely would be willing to pay a premium to ensure the continued assignment of these blocks by the time smaller bidders begin to participate in the assignment phase. USCC also previously explained how large bidders would acquire a significant amount of information about others' assignment phase bidding strategies and bid amounts before they first compete against smaller bidders, and how this "informational advantage" possessed by the large bidders would be particularly beneficial here because this will be the first auction in this country that includes an assignment phase.

While random sequencing will be especially necessary if the assignment phase includes bidding procedures, the Commission's current proposal also would disadvantage smaller bidders if it includes a "geographic contiguity" objective in its assignment optimization mechanism, as some commenters propose. As noted above, if the assignment rounds are sequenced on the basis of descending order of weighted-pops, this additional objective would make it more likely that large bidders are assigned geographically contiguous spectrum blocks as a result of their existing frequency assignments from earlier rounds, which could relegate smaller bidders to the least

desirable blocks in the PEA. In addition to making it more likely that smaller bidders will be systematically assigned the most impaired licenses, the Commission's sequencing proposal also could lead to the largest carriers' licenses being concentrated in a narrow swath of the 600 MHz band across large portions of the country. On the other hand, because random sequencing would limit "the degree to which any one carrier can acquire the same frequency within a geographic region," this approach would "establish a durable incentive for interoperable communications that offer greater safeguards against anticompetitive conduct..."[48] Finally, USCC again notes that, because the advantages of having contiguous blocks across adjacent PEAs arise regardless of the population levels in the PEAs, random sequencing would in no way undermine what appears to be the Commission's primary motivation for its sequencing proposal.

### F. The Commission Should Abandon Its Grouping Proposal, or Alternatively, Include a Safeguard to Prevent Inconsistent Assignments Across PEAs

In its initial comments, USCC noted several concerns related to the Commission's grouping proposal, which would assign the same block(s) to each bidder in every PEA included in the same group. USCC's primary concern is that this proposal fails to recognize that the level of impairment, or the location of impairments in relation to a carrier's current service area, will vary from one PEA to another. Sprint similarly noted that, while a carrier may be able to tolerate impairments in certain PEAs, in others, it may deem "unimpaired spectrum *imperative* given its lack of alternative spectrum holdings or because the predicted impairment area covers critical population segments or service locations..."[49] Under the Commission's proposal, however, "bidders are confronted by an unsatisfactory choice of applying their preference for specific frequencies ... evenly across all grouped PEAs, despite varying toleration for these characteristics between markets."[50]

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[48] Comments of T-Mobile at 48-49.

[49] Comments of Sprint at 32 (emphasis in original).

[50] *Id.* at 32-33.

USCC therefore urges the Commission not to adopt its grouping proposal. Although USCC understands the Commission's desire to "reduce the overall number of assignment rounds,"[51] declining to adopt this proposal likely would have a minimal effect on the number of assignment rounds. For instance, as a result of the various similarities the Commission proposes PEAs must possess in order to be grouped together, only a small number of PEAs may qualify. While this outcome also would reduce the potential harms associated with the Commission's grouping proposal, there is no reason to create the potential for these harms. Alternatively, if the Commission is inclined to adopt a grouping mechanism, USCC proposes that it add another constraint that would prevent PEAs with high impairment levels from being grouped together. Specifically, USCC proposes that the Commission only group together PEAs that do not contain licenses with greater than 5% impairment. While this would not fully address the concerns noted above, it would greatly reduce the risk that a bidder will be assigned a block in one PEA that is far less valuable than the same block in another PEA included in the same group.

## III. THE COMMISSION MUST RESIST EFFORTS BY THE LARGEST CARRIERS TO UNDERMINE THE SPECTRUM RESERVE'S PRO-COMPETITION GOALS

Given the current state of the wireless industry, and in recognition of the fact that the incentive auction "presents a once-in-a-generation opportunity to promote competition,"[52] the Commission established a spectrum reserve for this auction in order to "promote competition in the future, promote the efficient use of spectrum, ensure competitive mobile broadband service in rural areas, and avoid an excessive concentration of licenses."[53] USCC appreciates this decision, and with one exception detailed below, generally agrees with the Commission's current

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[51] *Public Notice*, 29 FCC Rcd at 15813. Although the Commission states that another benefit of its grouping proposal is that it would "facilitate assigning contiguous blocks to bidders that won multiple blocks in a group," *id.*, this appears unlikely given that the proposal would not require that PEAs be adjacent to one another in order to be included in the same group.

[52] *Policies Regarding Mobile Spectrum Holdings*, Report and Order, 29 FCC Rcd 6133, 6158 (2014) ("*Mobile Spectrum Holdings Order*").

[53] *Id.* at 6168.

proposals with respect to the spectrum reserve. Unsurprisingly, however, the nation's two largest carriers spent the bulk of the initial comments trying to convince the Commission to revise its proposals in various ways that would undermine the intended goals of the spectrum reserve. USCC therefore urges the Commission to resist all such attempts by these carriers.[54]

### A. The Proposed $1.25 Price Benchmark Represents a Reasonable Trigger for Spectrum Reserve

USCC again expresses its support for the Commission's proposal to set the price benchmark for the first component of the final stage rule, which will also act as the spectrum reserve trigger, equal to $1.25 per MHz-pop. USCC also generally supports the Commission's proposed method for determining whether forward auction revenue satisfies this $1.25 price benchmark, including its proposal to consider only the current gross bids for the Category 1 licenses in the largest PEAs. As T-Mobile explained, "by only considering bids for spectrum blocks in Category 1, the measurement will be more consistent with the price index derived from past auctions, which did not include licenses impaired in a manner comparable to Category 2 licenses."[55]

However, rather than looking to the 40 largest PEAs as the Commission proposes, USCC agrees with T-Mobile that the price benchmark should instead be based on the top 25 PEAs.[56] Given that these PEAs "cover approximately half of the U.S. population,"[57] the current clock prices for these licenses would serve as a "good leading indicator of final auction revenues"[58] to at least the same extent as the prices in the top 40 PEAs, but would have the added benefit of promoting an even faster auction "by enabling the auction to determine quickly when the final

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[54] *See* Comments of Comments of the Rural Wireless Association, Inc. and NTCA – the Rural Broadband Association ("RWA/NTCA") at 4 ("[T]he Commission must protect the benefits to competition and consumers that offering reserve spectrum provides…").

[55] Comments of T-Mobile at 41.

[56] *See id.* at 40.

[57] *Id.* at v.

[58] *Public Notice*, 29 FCC Rcd at 15770.

stage rule will not be met..."[59] Adopting a $1.25 price benchmark, and relying on these procedures to determine whether it has been satisfied, would best serve the public interest. For instance, T-Mobile explained how "using an average price per MHz-POP minimum requirement that is set too high or covers too many markets risks delaying the introduction of the spectrum reserve to the point that it no longer offers a meaningful safeguard against anticompetitive conduct."[60]

Although AT&T and Verizon contend that the proposed $1.25 per MHz-pop price benchmark is too low, they base their arguments on overly narrow, and at times incorrect, interpretations of the Commission's reasons for adopting the spectrum reserve, and for delaying the creation of this reserve until forward auction revenues meet a specified benchmark. For instance, Verizon focuses only on the Commission's desire to prevent the two nationwide carriers that already possess a substantial amount of below-1-GHz spectrum from driving prices up to foreclosure levels in order "to stifle competition that may arise if multiple licensees were to hold low frequency spectrum."[61] According to Verizon, because foreclosure "simply cannot happen if prevailing auction prices are only at $1.25,"[62] there is "no rational basis for setting aside 'reserved' spectrum as soon as auction prices reach $1.25 per MHz-pop..."[63] But Verizon fails to recognize that, in addition to *preventing* anti-competitive foreclosure, the spectrum reserve is intended to *promote* competition by permitting additional carriers to acquire low-band spectrum.[64]

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[59] *Id.*

[60] Comments of T-Mobile at 40.

[61] *Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6165.

[62] Comments of Verizon at 11.

[63] *Id.* at 10.

[64] *See Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6164 ("[T]here is a substantial likelihood of competitive harm if providers that currently lack sufficient access to [below-1-GHz spectrum] cannot acquire it."); *id.* at 6162 (noting that "*facilitating* access by multiple providers to below-1-GHz spectrum" would lead to various public interest benefits) (emphasis added).

In other words, the Commission should not adopt a higher price benchmark simply because an average price of $1.25 per MHz-pop may not, in and of itself, permit AT&T and Verizon to foreclose other bidders from acquiring 600 MHz licenses. As the Commission noted, "there is a reasonably foreseeable risk of not achieving [its] various Section 309(j) goals whether or not leading providers are motivated by foreclosure strategies."[65] In recognition of this risk, the Commission designed the spectrum reserve to also proactively facilitate access to low-band spectrum by other carriers in order to promote competition for the benefit of consumers.[66] This served as an additional, and independent, reason for establishing the spectrum reserve, separate from the Commission's desire to prevent AT&T and Verizon from actively attempting to foreclose their competitors from acquiring 600 MHz licenses. The Commission recognized that, because "low-band spectrum is less costly to deploy and provides higher coverage quality,"[67] if competitive carriers fail to acquire a sufficient number of 600 MHz licenses, they "will be unable to compete as robustly or constrain price increases by providers that do have such access."[68] As a result, the Commission concluded that the "consumer harms from the raising of rivals' costs from increased concentration of low-band spectrum outweigh the potential benefits of unlimited spectrum aggregation."[69]

AT&T and Verizon further allege that the prices from a select number of past auctions demonstrate that the proposed $1.25 price benchmark does not "represent a fair, market-based price for this spectrum."[70] They fail to recognize, however, that these prices represent the

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[65] *Id.* at 6168.

[66] *See id.* at 6166 ("This is a forward-looking rulemaking that must consider the potential for competitive harms in the future."); *id.* at 6196 ("Given the importance of multiple providers, including rural and regional providers, having access to below-1-GHz spectrum for deployment and competition, we conclude that a clear mobile spectrum holdings policy for the Incentive Auction is necessary to increase access opportunities to the 600 MHz Band.") (internal citation omitted).

[67] *Id.* at 6164.

[68] *Id.* at 6165.

[69] *Id.*

[70] Comments of AT&T at 8; *see* Comments of Verizon at 12-13.

maximum bidders were willing to pay in those auctions. In contrast, the Commission has explained that the spectrum reserve price benchmark "should reflect a 'floor' and not a 'ceiling' of the 'competitive values' of these licenses, in order to provide sufficient margin to account for the inherent price uncertainty present in any auction."[71] Nonetheless, AT&T claims that "adopting a trigger below market-based levels would undermine the objectives of the auction," as well as "place too much spectrum in the reserve auction."[72] The Commission, however, has repeatedly noted that a core objective of the incentive auction is to facilitate competition for the benefit of consumers, not to weaken established safeguards intended to accomplish precisely this objective.[73] AT&T also fails to acknowledge that the Commission capped the spectrum reserve at 30 MHz even for the highest spectrum clearing targets.[74]

Finally, USCC notes that AT&T is mistaken when it claims that a $1.25 price benchmark would cause the reserved spectrum "to be sold at large discounts," and that this would "result in non-reserve eligible bidders subsidizing the cost of the auction."[75] The spectrum reserve will not be triggered, however, until the final stage rule has been satisfied, at which point the revenues from the forward auction will have already covered the entire "cost of the auction." Moreover, bidding would continue for the reserved licenses, and given that the vast majority of bidders, including AT&T in many PEAs, will be reserve-eligible, competition for these licenses likely will be robust, and thus their final clock prices likely will be high.

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[71] *Public Notice*, 29 FCC Rcd at 15770.

[72] Comments of AT&T at 31.

[73] *See, e.g., Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, 6570 (2014) ("*Incentive Auction Order*") (Statement of Chairman Tom Wheeler) ("The Incentive Auction is a once-in-a-lifetime opportunity to expand the benefits of mobile wireless coverage and competition to consumers across the Nation, offering more choices of wireless providers, lower prices, and higher quality mobile services.").

[74] *See Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6203 (noting that "AT&T may be able to bid on reserved spectrum in many rural areas where it does not hold approximately one-third or more of below-1-GHz spectrum").

[75] Comments of AT&T at 31.

### B. The Commission Should Adopt a 20 MHz Cap on the Amount of Reserved Spectrum a Single Bidder May Acquire in a PEA

USCC agrees with CCA and T-Mobile that the Commission should not permit a single bidder to acquire more than 20 MHz of reserved spectrum in a given PEA.[76] As CCA explained, absent such a cap, "a single reserve-eligible bidder could capture the full 30 megahertz offering and prevent other interested bidders from accessing that PEA."[77] This risk of exclusion from the reserved licenses would be especially acute for smaller bidders given that at least two, and in many markets three, of the four nationwide carriers will be reserve-eligible.[78] Thus, without a limit on the amount of reserved spectrum that a single bidder may acquire, these carriers' "vast resources could run the table on both the reserve and non-reserve spectrum in those markets."[79]

Such an outcome would be in direct contravention to the intended purpose of the spectrum reserve – namely, "to facilitate access by multiple providers to below-1-GHz spectrum."[80] And the Commission made clear that this goal extends beyond "multiple *nationwide* providers." For instance, the Commission emphasized that non-nationwide carriers require 600 MHz spectrum rights in order to "provide some constraint on the ability of nationwide providers to act in anticompetitive ways to the detriment of consumers," as well as to continue offering "consumers additional choices in the areas they serve," including rural areas, "where multiple nationwide service providers may have less incentive to offer high quality services."[81] Notably, the proposed cap would help to advance these public interest goals without

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[76] *See* Comments of CCA at 27; Comments of T-Mobile at 4.

[77] Comments of CCA at 28.

[78] *See Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6203 (noting that "AT&T may be able to bid on reserved spectrum in many rural areas where it does not hold approximately one-third or more of below-1-GHz spectrum"); Comments of CCA at 28 (noting that "larger carriers are also reserve-eligible in a significant number of PEAs"); Comments of T-Mobile at 5, n. 13 (noting that "AT&T or Verizon are eligible for reserved spectrum in markets covering over 40% of the population").

[79] Comments of T-Mobile at 5, n. 13.

[80] *Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6204.

[81] *Id.* at 6206.

disadvantaging bidders given that "more than 20 megahertz of reserved spectrum is [not] necessary for a single reserve-eligible bidder to deploy next-generation networks..."[82] Moreover, as noted by CCA, even if some bidders would prefer more than 20 MHz in some PEAs, they "could still compete for additional non-reserved blocks after exhausting their reserve allotment."[83]

### C. The Amount of Reserved Spectrum in a PEA Should Not Be Based on the Demand Expressed by Reserve-Eligible Bidders in a Single Clock Round

Under the Commission's current proposals, the amount of reserved spectrum in a given PEA could be reduced based solely on the bidding activity of reserve-eligible bidders in a *single* clock round. First, the Commission proposes that, if the auction does not close in the initial stage, the *maximum* amount of reserved spectrum in each PEA in the subsequent stage would be capped at "the amount that the reserve-eligible bidders demanded at the end of the previous stage."[84] Second, the Commission proposes that "the *actual* number of blocks reserved in a PEA will be based on demand for Category 1 blocks by reserve-eligible bidders at the time the auction reaches the trigger, *i.e.*, when the final stage rule is satisfied."[85]

Either of these proposals would artificially, and unreasonably, reduce the amount of reserved spectrum in a large number of PEAs, and thereby undermine the pro-competition, pro-consumer purpose of the spectrum reserve. As CCA stressed, because "[d]emand among markets will shift throughout the auction," the demand expressed by reserve-eligible bidders "in any particular round does not provide a good indication of what actual demand in that market might be."[86] For instance, Sprint explained how "early bidding activity of all bidders

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[82] *Public Notice*, 29 FCC Rcd at 15801.

[83] Comments of CCA at 28.

[84] *Public Notice*, 29 FCC Rcd at 15760.

[85] *Id.* at 15799 (emphasis added).

[86] Comments of CCA at 24.

consistently focuses on larger markets for purposes of maximizing bidder eligibility..."[87] However, as an auction progresses, bidding "naturally spreads to mid- and small markets," at which time the overall activity in the auction "more accurately reflect[s] the demand of bidders for licenses in specific markets."[88] But under the Commission's proposals, reserve-eligible bidders would be effectively forced to abandon this sensible bidding strategy because they would have no prior notice that the current round would end up being the crucial round immediately before the auction moves to a new stage or the final stage rule is satisfied. Accordingly, "[e]ver-fearful that the spectrum reserve could shrink in any given round because the trigger has been met, reserve-eligible bidders [would] have to park their eligibility in all their desired mid- and small markets."[89] As a result, these bidders would "have less bidding flexibility from the very outset of the auction," while AT&T and Verizon would be able to freely "switch their demand across PEAs (and bidding categories within PEAs) in response to changes in price and demand."[90]

Another possibility is that, during this single round, an anomalous amount of demand by reserve-eligible bidders could happen to be for Category 2 licenses, which also would not be factored into the amount of reserved spectrum that could, or would, be offered in a given PEA. However, as T-Mobile noted, the mere fact that a reserve-eligible bidder switched its demand to Category 2 licenses "does not necessarily signify a lack of interest in bidding on the spectrum reserve."[91] For instance, at a certain point in the auction, the clock price for the Category 2 licenses in a PEA may be well below the clock price for the Category 1 licenses in that PEA

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[87] Comments of Sprint at 46; *see* Comments of CCA at 23 ("[B]idders tend to bid on larger markets in early rounds to maintain high eligibility.").

[88] Comments of Sprint at 46.

[89] *Id.*; *see* Comments of CCA at 23-24 ("By forcing reserve-eligible applicants to express demand early and consistently for these smaller markets, the Commission would be disrupting what have been proven to be effective bidding strategies.").

[90] Comments of Sprint at 46.

[91] Comments of T-Mobile at 9.

even though the average impairment of the Category 2 licenses barely exceeds the 15% threshold for Category 1 licenses and one or more of the Category 1 licenses have impairments approaching that threshold. In this situation, a bidder could reasonably decide to bid on the Category 2 licenses even though its general auction strategy is focused on Category 1 licenses. However, if the difference between the clock prices for the Category 1 and Category 2 licenses begins to close as the auction progresses, the bidder may decide that the possibility of ultimately being assigned one of the least-impaired Category 1 licenses, which would be far more valuable than the Category 2 licenses, is worth the risk of paying the higher Category 1 clock price. As T-Mobile explained, "[r]educing or eliminating the reserve under these circumstances would penalize the wholly rational bidding behavior of switching back and forth between Category 1 and Category 2 spectrum depending on price differentials and the degree of impairment of any given license."[92]

For these reasons, USCC agrees with Sprint and other commenters that "reserve-eligible demand should not be determined on the basis of a single round."[93] As an alternative, both T-Mobile and CCA propose that the "total demand of reserve-eligible bidders – not just their demand for Category 1 spectrum – should determine the size of the spectrum reserve."[94] CCA also proposes that the Commission "base the establishment of the reserve on a period of activity, potentially the previous 10 rounds," which CCA explains would be a "better indicia of actual demand in the market."[95]

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[92] *Id.*; *see* Comments of CCA at 23 ("[T]his proposal fails to acknowledge that bidders may have a reason to prefer, and thus bid on, Category 2 blocks instead of Category 1 blocks.").

[93] Comments of Sprint at 46; *see* Comments of CCA at 23-24; Comments of T-Mobile at 8-9.

[94] Comments of T-Mobile at 9; *see* Comments of CCA at 24 ("[T]he spectrum reserve's size should be based on all bidding by reserve-eligible participants in a given market, regardless of whether they have bid on Category 1 or Category 2 licenses.").

[95] Comments of CCA at 24.

While these proposals would help to prevent the artificial reduction or elimination of the spectrum reserve in a PEA as a result of reserve-eligible bidders pursuing reasonable, and competitively necessary, bidding strategies, there are potentially significant, and perhaps insurmountable, implementation issues with both proposals. Specifically, it likely would be impossible to implement these proposals given the Commission's proposal "not to allow a bidder to reduce the quantity of blocks it demands in a category if the reduction will result in aggregate demand falling below the available supply of licenses in the category."[96] Thus, with respect to the proposal to count demand for both Category 1 and Category 2 licenses, reserve-eligible bidders demanding Category 2 licenses could not switch their demand to Category 1 licenses if this would reduce the total demand for the Category 2 licenses in the PEA below the available supply. If so, there would be insufficient demand for the reserved Category 1 licenses in that PEA because, under this proposal, the supply of such licenses would have been based on the demand of one or more of these Category 2 bidders. There would also be the possibility that some reserve-eligible Category 2 bidders would simply choose not to switch their demand to Category 1 licenses.

CCA's proposal to base the amount of reserved spectrum on the activity by reserve-eligible bidders in previous rounds also could lead cause demand to fall below supply for some licenses. As an example, assume that a bidder had been consistently been demanding Category 1 licenses in PEA-1 for many rounds, but had switched its demand to PEA-2 a couple of rounds before the spectrum reserve is triggered. Presumably, under CCA's proposal, if demand for the Category 1 licenses in PEA-1 would otherwise be insufficient, the actual amount of reserved spectrum in this PEA would have been based in part on this bidder's previous demand given that it had been bidding on these licenses in eight out of the ten previous rounds. However, because the bidder currently was bidding on licenses in PEA-2, it would not be able to switch its demand

[96] *Public Notice*, 29 FCC Rcd at 15806.

back to PEA-1 if doing so would cause the total demand for the Category 1 licenses in PEA-2 to fall below the supply of such licenses. Or, here too, the bidder may have decided, for any number of reasons, to permanently turn its attention to PEA-2, and thus would have no desire to switch its demand back to PEA-1. In either case, there would be insufficient demand for the Category 1 licenses in PEA-1.

As discussed above, however, in many instances the fact that a reserve-eligible bidder was bidding on licenses in another PEA, or for Category 2 licenses in the same PEA, would not indicate a lack of interest in the Category 1 licenses in the same or another PEA, but rather simply reflect the pursuit of common bidding strategies. Thus, as the auction progressed, they would gradually shift their demand to other, likely smaller, PEAs, or from Category 2 to Category 1 licenses. But their auction participation simply may not have reached that point when the spectrum reserve is suddenly, and unexpectedly, triggered. If given the opportunity, however, they would immediately switch their demand to the Category 1 licenses in the PEAs that they would have naturally shifted to in later rounds.

Given the significant public interest benefits of ensuring a robust spectrum reserve, USCC believes that such bidders should be given exactly this opportunity, and thus proposes a one-time "special round," which would occur immediately after the spectrum reserve is triggered. Under this proposal, if the demand by reserve-eligible bidders for Category 1 licenses in a PEA is less than the maximum permissible spectrum reserve when the final stage rule is satisfied, the number of licenses by which demand fell short would be *provisionally* classified as unreserved Category 1 licenses. For example, assume a PEA has a total 70 MHz of licensed spectrum and a maximum spectrum reserve of 30 MHz. If reserve-eligible bidders are demanding only two Category 1 licenses when the spectrum reserve is triggered, this PEA would have two reserved licenses, four unreserved licenses, and one "provisionally-unreserved" license.

As noted, the proposed "special round" would take place immediately after the spectrum reserve has been triggered, at which point in the auction the clock price for both the reserved and unreserved Category 1 blocks in each PEA will be the same.[97] This round would be restricted to reserve-eligible bidders because its sole purpose would be to address the lack of any prior notice that their activity in a single round could significantly alter the competitive dynamic of the auction. In other words, the "special round" would provide reserve-eligible bidders with the opportunity to shift their demand to other PEAs that many of these bidders would have seized had they known that auction was about to satisfy the final stage rule. In addition, because the proposed "special round" would not involve every bidder, the clock prices would not increase for this round, which would have the added benefits of simplicity and speed, as well as preventing anti-competitive actions by the non-reserve-eligible bidders.[98]

The "special round" would then operate as follows. Reserve-eligible bidders would have a single opportunity to submit bids to switch their demand across PEAs and/or license categories. Reserve-eligible bidders with excess eligibility also could submit simple or all-or-nothing bids. If any of these switch bids would cause the demand for any category of licenses to fall below the available supply of such licenses, the auction system would apply the bids pseudo-randomly, as the Commission proposes with respect to the normal clock rounds.[99] In other words, the "special round" procedures would mirror every other round, except that the clock prices would not increase for this round. Accordingly, the Commission could use its standard auction software for this round, and bidders could apply their standard bidding strategies. The "special round,"

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[97] *See id.* at 15801 ("Because a uniform clock price will apply to all the Category 1 spectrum blocks in a PEA at the time of the split, the clock price will be the same for both the reserved and the unreserved Category 1 blocks in the first bidding round after the auction reaches the spectrum reserve trigger.").

[98] For instance, if the clock prices increased for this round, every bidder would need to participate, and the non-reserve-eligible bidders with standing bids for licenses where demand exceeds supply would have an incentive to temporarily switch their demand to other PEAs in order to prevent reserve-eligible bidders from reducing their demand in these PEAs in order to switch to a PEA that currently has insufficient demand for Category 1 licenses by reserve-eligible bidders.

[99] *See id.* at 15808.

therefore, would only require a minimal amount of time and effort on the part of the Commission or bidders. Finally, for each PEA for which bidding in the "special round" corrected a previous shortfall with respect to demand by reserve-eligible bidders, the auction system would restore the "provisionally-unreserved" license(s) to reserved status, conclude the "special round," and proceed to the next round (a normal clock round) with the spectrum reserve in place.

As noted, the potential for the amount of reserved spectrum in a PEA to be reduced based solely on the bidding activity of reserve-eligible bidders in a single clock round also arises any time the auction proceeds to a new stage. Given the speed and simplicity of its proposed "special round," USCC believes this procedure could also be used in this situation in order to prevent artificial reductions in the amount of reserved spectrum. Alternatively, the Commission could address this potential harm simply by not adopting its proposal to base the maximum amount of reserved spectrum in a subsequent stage on the expressed demand by reserve-eligible bidders during the last clock round of the preceding stage. Given that the spectrum reserve will not come into existence until the final stage has been satisfied (*i.e.*, once it has been determined that the auction will not again proceed to another stage), it seems wholly unnecessary to potentially restrict the maximum size of the reserve in particular PEAs based on an extremely limited snapshot of bidding activity in a prior stage.

### D. In PEAs With a Limited Number of Category 1 Licenses, the Commission Should Include the "Best Three" Licenses in the Spectrum Reserve

With respect to any PEAs with fewer Category 1 blocks than the size of the maximum reserve, USCC, like a majority of other commenters, urges the Commission to address this shortfall by including the least-impaired Category 2 licenses in the spectrum reserve, up to maximum reserve.[100] As the Commission notes, this approach would "ensure that the need to offer fewer Category 1 blocks in certain PEAs in order to accommodate market variation does

[100] *See* Comments of CCA at 22; Comments of C Spire at 4; Comments of RWA/NTCA at 3; Comments of T-Mobile at 6-7; Comments of Sprint at 48.

not reduce the benefits to competition and consumers from providing opportunities for multiple providers to gain access to low-band spectrum."[101] USCC also notes the importance of only adding the least-impaired Category 2 license(s) to the spectrum reserve in a PEA. As CCA explained, this approach would allow the Commission "to maintain the idea that reserve spectrum should be relatively unimpaired without jeopardizing the primary mechanism for ensuring that smaller carriers can compete at the 600 MHz incentive auction."[102]

### E. Continuing to Base the Maximum Amount of Reserved Spectrum on the Initial Clearing is Consistent with the *Mobile Spectrum Holdings Order*

AT&T wrongly claims that the Commission's proposal to "fix the amount in the reserve auction based on the "initial" clearing target, not on the actual amounts of spectrum offered for sale," would impermissibly modify the approach adopted by the Commission in the *Mobile Spectrum Holdings Order*.[103] As support, AT&T quotes a passage from that order which states that "the amount of reserved spectrum in each individual PEA will be set at the level demanded by reserve-eligible entities at the time the spectrum reserve trigger is satisfied, up to the maximum amount of reserved spectrum *at the beginning of the stage*."[104] According to AT&T, this statement constituted a "promise[]to tie the maximum reserve amount to the total amount of spectrum in each stage, not just the initial stage."[105] Apparently, AT&T has confused the Commission's distinct mechanisms for determining the *maximum* and *actual* amounts of reserved spectrum in a given PEA.

Specifically, at the start of the auction, the Commission will establish a uniform maximum spectrum reserve for every PEA based on the size of the initial clearing. Then, if the

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[101] *Public Notice*, 29 FCC Rcd at 15800.

[102] Comments of CCA at 22; *see* Comments of RWA/NTCA at 3-4 ("While largely unimpaired spectrum is certainly preferred – the simple fact is that *more* reserve spectrum is better than *less* reserve spectrum for the Associations' members and rural consumers generally.").

[103] Comments of AT&T at 33.

[104] *Id.* at 34 (quoting *Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6211) (emphasis added by AT&T).

[105] *Id.*

auction moves to another stage, this maximum spectrum reserve will only be reduced with respect to those PEAs in which there was insufficient demand by reserve-eligible bidders at the close of the previous stage.[106] Stated another way, the Commission held that the maximum spectrum reserve will remain the same, and thus continue to be based on the *initial* clearing target, in every PEA in which reserve-eligible bidders had expressed sufficient demand when the previous stage ended. Thus, Commission's statement in the *Mobile Spectrum Holdings Order* emphasized by AT&T (*i.e.*, "at the beginning of the stage") merely reflects the fact that the spectrum reserve could have been reduced with respect to some PEAs, and thus be smaller than the maximum permitted by the final stage rule, as a result of insufficient demand by reserve-eligible bidders. USCC also notes that the Commission made this point abundantly clear in the *Mobile Spectrum Holdings Order* when it noted that, "if the initial clearing target is 100 megahertz, the maximum reserve will be 30 megahertz in the initial *and subsequent stages*."[107]

## IV. USCC SUPPORTS THE PROPOSED GENERIC LICENSE CATEGORIES, BUT STRESSES THE NEED FOR DETAILED IMPAIRMENT INFORMATION

USCC supports the Commission's proposal to categorize as Category 1 those licenses with predicted impairments affecting up to 15% of a PEA's population, and to categorize as Category 2 those licenses with predicted impairments affecting more than 15%, but not greater than 50%, of a PEA's population.[108] USCC therefore opposes the proposals by some commenters to offer only wholly-unimpaired licenses outside of border areas, or to offer only Category 1 licenses. The effect of these proposals would be to significantly reduce the number of licenses offered in the incentive auction that otherwise could be used to help alleviate our

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[106] *See Mobile Spectrum Holdings Order*, 29 FCC Rcd at 6208 ("If the auction does not close in the initial stage, the maximum amount of reserved licensed spectrum in each individual market in subsequent stages will be the smaller of: (1) the maximum amount of reserved spectrum in the previous stage, or (2) the amount that the reserve-eligible bidders demand at the end of the previous stage.").

[107] *Id.* at 6208, n. 521 (emphasis added); *see id.* ("By contrast, if the initial spectrum clearing target is 60 megahertz, the maximum reserve in the initial and subsequent stages will be 20 megahertz.").

[108] *See Public Notice*, 29 FCC Rcd at 15797.

nation's spectrum crunch and to provide valuable mobile broadband services in currently unserved or underserved areas. Fewer licenses also would make it more likely that the largest, already dominant carriers dominate the incentive auction to the exclusion of small and regional carriers, who require additional low-band spectrum in order to serve rural areas and provide consumers with competitive alternatives.

Largely for these same reasons, USCC also opposes the Commission's alternative proposal to restrict Category 1 to only those licenses that are not subject to any inter-service interference.[109] As the Commission notes, this approach would "reduce the number of licenses available in Category 1,"[110] which CCA explained could exacerbate the risk of market foreclosure due to the "increased risk that there would be insufficient blocks to populate the reserve spectrum."[111] Another drawback of this approach noted by CCA is that it would "reduc[e] fungibility of category 2 blocks."[112] In addition, primarily because of the need to ensure that licenses included in the same generic category are reasonably fungible, USCC opposes CCA's proposal that the Commission merge its proposed generic license categories into a single category containing licenses with impairments affecting up to 50% of the PEA's population.[113] As the Commission recognized, "there is a limit to the extent that impaired licenses reasonably can be considered fungible..."[114] And, as Sprint explained, decreased

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[109] *See id.* at 15798.

[110] *Id.*

[111] Comments of CCA at 2; *see* Comments of T-Mobile at 23 (noting that a "zero percent impairment standard would limit the spectrum reserve and thus harm competition").

[112] Comments of CCA at 22; *see* Comments of T-Mobile at 22 ("[A] zero percent impairment level ... creates a cliff effect where spectrum that is only one percent impaired is treated the same as spectrum 49% impaired even though it is much more similar to the zero percent impaired spectrum.").

[113] *See* Comments of CCA at 20.

[114] *Public Notice*, 29 FCC Rcd at 15798.

fungibility creates increased "uncertainty and exposure risk" for bidders, which leads to more conservative bidding and decreased auction participation.[115]

USCC also urges the Commission not to adopt T-Mobile's proposal to offer "downlink spectrum that has a wholly impaired uplink available as Category 2 spectrum in the forward-auction phase of bidding so long as the downlink channel is not more than 25% impaired."[116] In other words, T-Mobile proposes that the Commission, subject to certain conditions, include supplemental downlink spectrum in the incentive auction. The Commission, however, has already concluded that the "benefits of offering paired spectrum blocks are greater than the benefits of offering downlink-only blocks in the 600 MHz Band."[117] For instance, the Commission explained how paired spectrum "will facilitate the deployment of networks by smaller carriers and new entrants by allowing them to obtain much-needed low frequency, paired spectrum."[118] In contrast, the Commission found that offering downlink-only spectrum could "undermine competition" because "new entrants would not be able to use downlink-only blocks..."[119] Including downlink-only licenses obviously would also decrease the fungibility of the Category 2 licenses in PEAs that would fit within T-Mobile's proposal.[120]

In addition, with regard to how the Commission should treat licenses with impairments greater than 50%, USCC agrees with CTIA and other commenters that these heavily impaired licenses should be offered in a subsequent auction, preferably not long after the conclusion of the incentive auction.[121] Although the impairment levels of these licenses make them ill-suited for

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[115] Comments of Sprint at 29.

[116] Comments of T-Mobile at 24.

[117] *Incentive Auction Order*, 29 FCC Rcd at 6585.

[118] *Id.* at 6590.

[119] *Id.* at 6589-90; *see* Comments of CCA at 5 ("Many operators will rely upon the 600 MHz band as their first and only low-band spectrum deployment.").

[120] *See Incentive Auction Order*, 29 FCC Rcd at 6585 (noting that its decision to adopt an all-paired 600 MHz band plan will "allow[] for maximum interchangeability of blocks").

[121] *See* Comments of CTIA at 18; Comments of CCA at 26; Comments of T-Mobile at 33.

an auction offering licenses grouped into generic categories, as CCA noted, heavily impaired licenses nevertheless "will likely attract significant interest from carriers."[122] For instance, because the impairment levels will be determined on the basis of the population affected, the unimpaired portions of these licenses could cover a significant amount of geography, and "thus still represent a valuable resource for carriers seeking to expand their coverage footprint."[123] In this way, these licenses could be particularly well-suited for carriers focused on providing service in rural areas – typically, local and regional carriers, who may have limited success during the incentive auction because the prices will primarily reflect the value bidders assign to the most populated areas in each PEA.[124] Another significant benefit noted by CTIA is that a subsequent auction would "give potential bidders the time needed to more thoroughly evaluate the nature of the impairments on each license."[125]

USCC therefore urges the Commission not do adopt its alternative proposal to make these licenses available to bidders "in conjunction with adjacent licenses offered in the same PEA."[126] As CCA explained, because the "largest carriers, which already hold the most low-band spectrum, are likely to win the lion's share of licenses at the 600 MHz incentive auction," assigning heavily-impaired licenses in this way would primarily "benefit those larger carriers at the expense of competition."[127] In contrast, a separate follow-on auction "would allow these

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[122] Comments of CCA at 26; *see* Comments of T-Mobile at 34 ("[S]pectrum in the 600 MHz band – even heavily encumbered spectrum – holds value for wireless broadband providers.").

[123] Comments of T-Mobile at 34.

[124] *See* Comments of CCA at 26 ("By auctioning those licenses at a later point, the Commission can bring more spectrum to auction and provide an opportunity to hold low-band spectrum that would not otherwise be available.").

[125] Comments of CTIA at 18-19.

[126] *Public Notice*, 29 FCC Rcd at 15799.

[127] Comments of CCA at 26-27; *see* Comments of T-Mobile at 35-36 ("[A]warding heavily impaired licenses as a bonus to the winners of the assignment round may reinforce the manifest trend to spectrum resource concentration in the United States.").

licenses to go to the entities that value them the most and help promote the public interest in robust competition."[128]

Finally, USCC stresses that, in order to reduce the inherent uncertainty associated with auctioning off licenses with varying degrees of impairment, the Commission must provide bidders with as much information as possible regarding the extent and nature of these impairments. In particular, USCC joins other commenters in urging the Commission to make the results of the F(50,10) statistical propagation model available to bidders.[129] Given that the "difference in impairment levels when using F(50,50) versus F(50,10) varies dramatically and unpredictably,"[130] releasing this information would permit bidders to make more informed decisions, which would "lead to more reliable and efficient auction results."[131]

## V. CONCLUSION

For the reasons set forth herein, with a few minor revisions, the Commission's proposed procedures will provide a reasonable opportunity for carriers of all sizes to acquire 600 MHz licenses, which would help the Commission achieve many of its primary public interest goals and statutory obligations. USCC therefore urges the Commission to adopt its proposed revisions, as well as to resist calls by the nation's largest carriers to adopt procedures here that would undermine the pro-competition, pro-consumer actions the Commission has already taken with respect to the incentive auction.

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[128] Comments of T-Mobile at 33; *see* Comments of CTIA at 18 ("[T]he most productive allocation of such licenses would occur at a later date than the assignment phase...").

[129] *See* Comments of Sprint at 16; Comments of CTIA at 10; Comments of CCA at 30.

[130] Comments of Sprint at 18, n. 30.

[131] Comments of CCA at 31; *see* Comments of CTIA at 14 ("[P]roviding more granular geographic data the Commission would greatly enhance the ability of bidders to develop strategies and make sound choices.").

Respectfully submitted,

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